

Remarks

Claims 17 - 39 are pending. Favorable reconsideration is respectfully requested. Applicants thankfully acknowledge the allowance of claims 38 - 39.

Claims 19 and 21 have been objected to. Claim 19 has been amended to make it independent, claiming specific compounds therein. The additional limitations of claim 17 are not necessary to be included in the amended claim, as the prior art does not teach or suggest the claimed compounds, and the amendment to render claim 19 independent raises no new issues, since the patentability of each individual compound has been searched. Claim 21 has been objected to, and has been amended to include all limitations of claim 20 from which it depends. Claims 19 and 21 should thus be allowable, and withdrawal of the objection to these claims is solicited.

Claims 17 - 18, 20, 22 - 37 have again been rejected as anticipated by *Feher*, et al. ("*Feher*"). Applicants traverse this rejection, and respectfully request the Examiner to reconsider the claims based on the following.

Claim 17 requires the reactive functional group to be directly attached to the phenyl ring. *Feher* discloses reactive halo groups (Cl, I), hydroxymethylene groups, nitromethylene groups, and acetomethylene groups, i.e. all containing the structure $X-CH_2-\phi$ where the reactive group X is attached to the phenyl ring by a methylene spacer. Such compounds are not within the scope of the claims as amended. The Examiner thoughtfully pointed to the "hydroxyalkyl" substituents of Applicants' claim 23. However, claim 23 is not a composition claim, but a method claim dependent upon claim 20. Thus, the scope of the groups attached by the method of claim 23(20) is different from those which are within the scope of claim 17. As Applicants' composition claims clearly pertain only to compounds where the functional group is attached directly to the aryl ring carbons and not through spacers, and as *Feher* only pertains to compounds including spacer groups, there can be no anticipation under 35 U.S.C. § 102(b). Withdrawal of the rejection is solicited for this reason.

Claim 20 requires that a phenyl-substituted silsesquioxane be provided, following which phenyl groups are substituted. *Feher* does not teach or suggest such a process. In *Feher*, rather than provide a phenyl-substituted silsesquioxane and then substitute the phenyl groups, *Feher* provides a chloroalkylphenyl-substituted chlorosilane ($\text{p-ClCH}_2\phi\text{SiCl}_3$) and oligomerizes in a condensation/hydrolysis reaction in acetone/water to provide $[\text{p-ClCH}_2\text{C}_6\text{H}_4\text{SiO}_{3/2}]_8$, in only 6% - 15% yield! Thus, *Feher* never synthesizes a phenyl-substituted silsesquioxane, and does not subsequently derivatize. Moreover, *Feher* indicates quite clearly the inertness of the $\text{ClCH}_2\phi$ - substituted silsesquioxanes, and even the $\text{ICH}_2\phi$ - substituted analogues. See, e.g. p. 37, first full paragraph to the bottom of the page. Thus, *Feher* does not disclose, nor does he teach or suggest the method of claim 20.

Claims 22 - 24 are dependent on claim 20 and further delineate the methods claimed. Claim 22, for example, requires electrophilic substitution of a functional group for a ring hydrogen of the phenyl-substituted silsesquioxanes. *Feher* does not teach or suggest such a method. Factually, he does not even mention electrophilic substitution. The substitution reactions of *Feher* are aliphatic, substituting functional groups for the I of the ICH_2 - moieties, not electrophilic substitution of an aryl ring. Claim 24 is dependent on claim 22, while claim 23 is dependent on claim 20. All these claims are clearly allowable over *Feher*.


Claims 25 - 37 are directed to nanocomposites, i.e. materials having a continuous phase which incorporate nanoparticles to modify their properties. The claims require the nanocomposite to contain the silsesquioxane of claim 1. It should be noted that the silsesquioxanes of claim 1 are not nanocomposites themselves, they are nanoparticles. However, they are functionalized nanoparticles which can be reacted with other nanoparticles and/or thermoplastic or thermoset resins to prepare nanocomposites. *Feher* does not teach or suggest any nanocomposites. All *Feher* suggests is some isolated compounds, with no suggested use. If the Examiner disagrees, the Examiner is respectfully requested to those portions of *Feher* which disclose nanocomposites generally, and especially the nanocomposites of claims 26 (multilayer structure); 27, 28, 29 (alternating multilayer structure with intervening

reactive spacers; core/shell structures (claims 30 - 33); continuous thermoset/or thermoplastic polymer matrices (claims 34 - 36); or the devices of claim 37.

Applicants submit that the claims are now in condition for Allowance, and respectfully request a Notice to that effect. If the Examiner believes that further discussion will advance the prosecution of the Application, they are highly encouraged to telephone Applicants' attorney at the number given below.

Respectfully submitted,

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